



SANYO Semiconductors

# DATA SHEET

## LA73050 — Monolithic Linear IC 6ch 75Ω Video Driver

### Overview

This LA73050 is a 6ch 75Ω Video Driver IC. The LA73050 is ideal for use the video output driver such as VCR and DVD-player equipment.

### Functions

- 6dB AMP+driver (6ch)

### Specifications

#### Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V <sub>CC</sub> max		±7, +14	V
Allowable power dissipation	Pd max	Ta ≤ 80°C *	600	mW
Operating temperature	Topr		-20 to +80	°C
Storage temperature	Tstg		-55 to +150	°C

\* When mounted on a 114.3×76.1×1.6mm<sup>3</sup> glass epoxy board.

#### Recommended Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommending operation voltage	V <sub>CC</sub>		±5, +9	V
Operating voltage range	V <sub>CC</sub> op		±4.0 to ±5.5 +8 to +10	V

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# LA73050

**Electrical Characteristics** at  $T_a = 25^\circ\text{C}$ ,  $V_{CC} = \pm 5\text{V}$ , The mode with DC offset.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current dissipation	$I_{CC1}$	No signal	56.1	66	75.9	mA
Voltage gain	VG	$V_{IN} = 1\text{Vp-p}$ , $f = 4.43\text{MHz}$	5.7	6.2	6.7	dB
Frequency characteristics 1	VF1	$V_{IN} = 1\text{Vp-p}$ , $f = 100\text{k}/5\text{MHz}$	-1.0	0	1.0	dB
Frequency characteristics 2	VF2	$V_{IN} = 1\text{Vp-p}$ , $f = 100\text{k}/27\text{MHz}$		-25	-20	dB
Group delay	GD	$f = 100\text{k}/4.43\text{MHz}$		$\pm 10$	$\pm 15$	ns
Maximum output level	$V_O \text{ max}$	$f = 1\text{kHz}$ , THD = 1%	3.0	4.0		Vp-p
Control voltage H level	$V_{\text{cntH}}$	Pins 7, 16 input voltage	2.5		$V_{CC}$	V
Control voltage L level	$V_{\text{cntL}}$	Pins 7, 16 input voltage	0		1.0	V

## Design guarantee items

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Video S/N	$VG_{1V}$			-75	-70	dB
Differential Gain	DG	$V_{IN} = 1\text{Vp-p}$ , RAMP signal			1.0	%
Differential Phase	DP	$V_{IN} = 1\text{Vp-p}$ , RAMP signal			1.0	deg.
Mute attenuation	$V_{\text{MUTEV}}$	$V_{IN} = 1\text{Vp-p}$ , $f = 4.43\text{MHz}$		-60	-55	dB
Cross-talk between channel	$V_{\text{CTKV}}$	$V_{IN} = 1\text{Vp-p}$ , $f = 4.43\text{MHz}$		-60	-55	dB

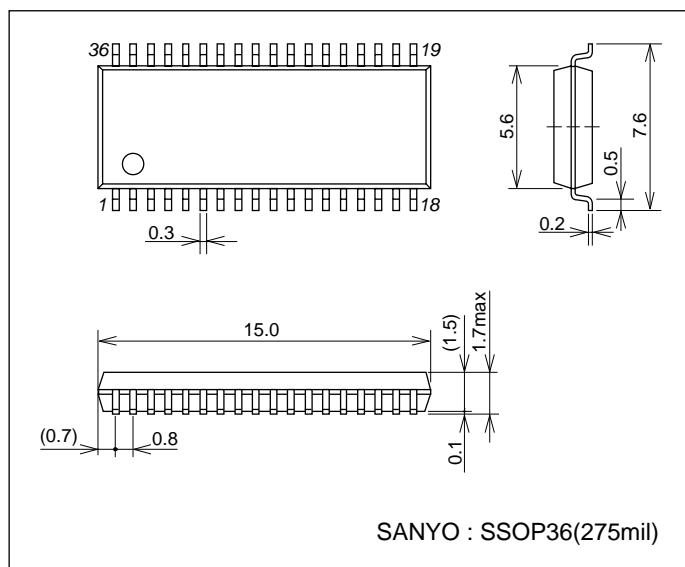
## Truth Table

	Pins 7, 16
H	THROUGH
L	MUTE

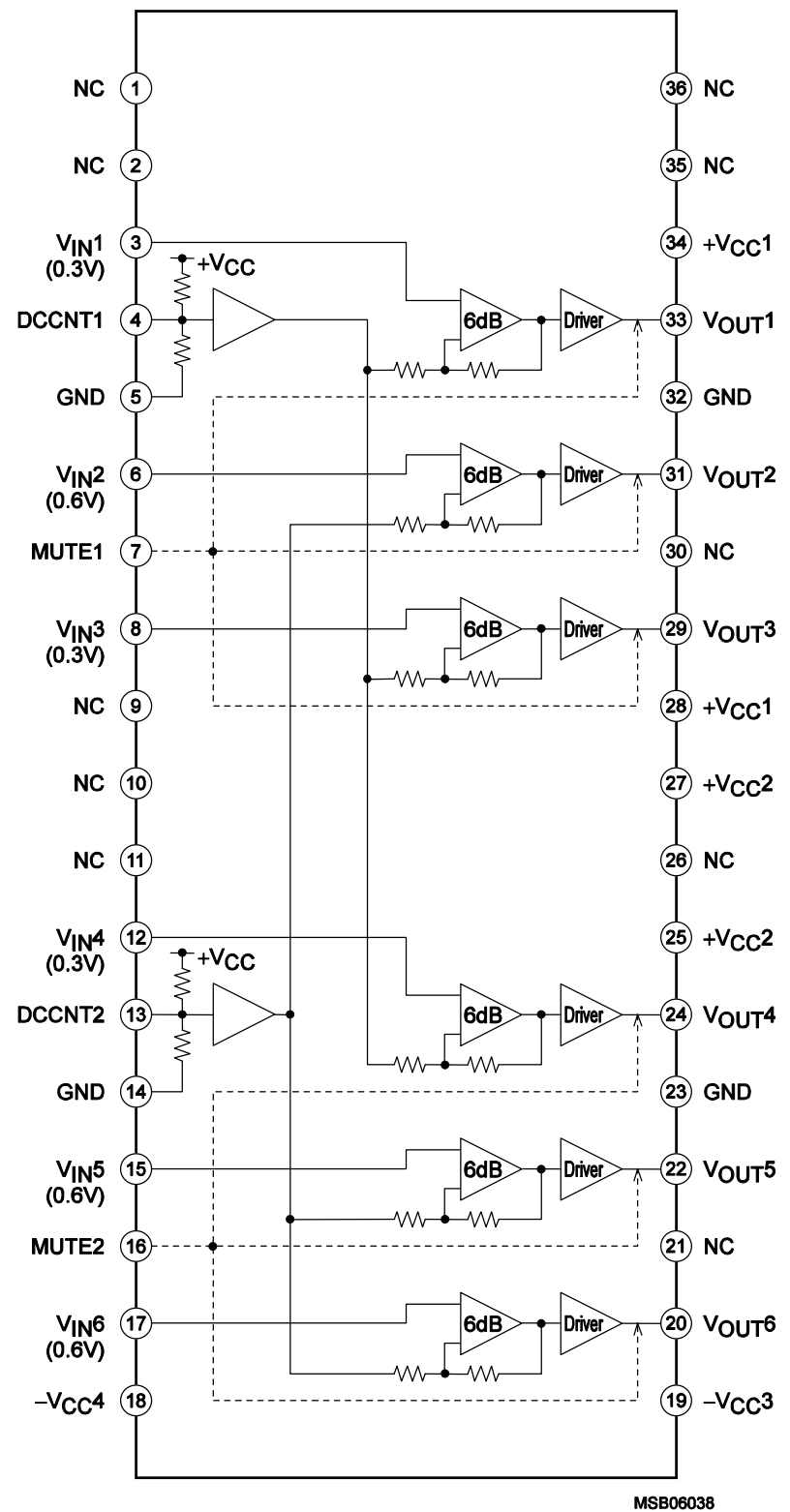
## Package Dimensions

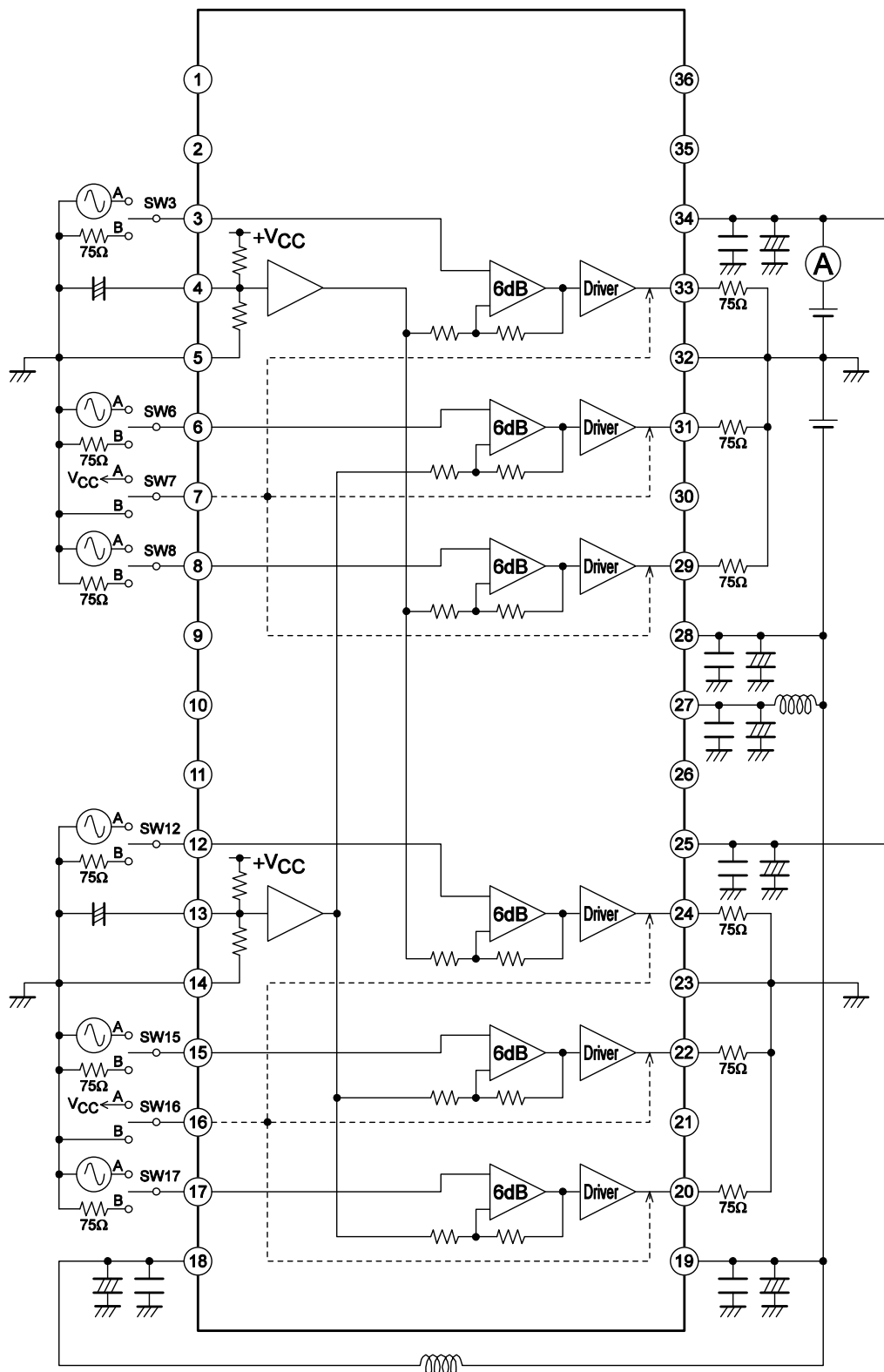
unit : mm

3247A



Block Diagram



Test Circuit Diagram (Using  $\pm$ power supply)

MSB06039

## Pin Functions

Pin No.	Pin Name	Terminal Explanation	Equivalent Circuit
1 2 9 10 11 21 26 30 35 36	NC		
3 6 8 12 15 17	V <sub>IN1</sub> V <sub>IN2</sub> V <sub>IN3</sub> V <sub>IN4</sub> V <sub>IN5</sub> V <sub>IN6</sub>	Input terminal. Non-bias. It is possible to use with being directly connected with DC. When DC coupling, it is necessary to add bias after the coupling.	<p>MSP06323</p>
4 13	DCCNT1 DCCNT2	DC offset mode charge terminal between input and output When a condenser is input at the position between pin 4 (DCCNT1) and GND, the operation of IC becomes the mode with 0.3V DC offset between input and output of 1, 3, 4ch (pins 3 and 33, pins 8 and 29, pins 12 and 14). Similarly when a condenser is input at the position between pin 13 (DCCNT2) and GND, it becomes the mode with 0.6V DC offset between input and output of 2, 5, 6ch (pins 6 and 31, pins 15 and 22, pins 17 and 20). And when pins 4, 13 and GND is shorted, it becomes the mode without DC offset between input and output.	<p>MSP06364</p>
5 14 23 32	GND	Both ±power supply and +power supply are GND.	
7 16	MUTE1 MUTE2	Changeover terminal of Mute. When the Mute terminal is Low, it is Mute. When the terminal is Open, it is Low.	<p>MSP06325</p>

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Pin No.	Pin Name	Terminal Explanation	Equivalent Circuit
18 19 27 28	$-V_{CC}$	$-V_{CC}$ of using $\pm$ power supply. Using +power supply, it is GND.	
20 22 24 29 31 33	VOUT6 VOUT5 VOUT4 VOUT3 VOUT2 VOUT1	Output terminal. Using $\pm$ power supply, in case of the mode with DC offset, it is possible to use without capacitor of output by setting pins 3, 8, 12 to 0.3V-bias and by setting pins 6, 15, 17 to 0.6V-bias. And in case of the mode without DC offset, it is possible to use without capacitor of output by setting each input to zero-bias. When using +power supply, both of the modes needs coupling capacitor.	
25 34	$+V_{CC}$	Both $\pm$ power supply and +power supply are $+V_{CC}$ .	

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